USGS Hydroacoustics Newsletter

August 2019

The Hydroacoustics Work Group has prepared the following newsletter as a means to help keep USGS Water programs staff up-to-date on new and important issues related to hydroacoustic instruments, methods, and software. If you have comments or questions please contact the HaWG (gs-w_hawg_all@usgs.gov) or individual members listed at the end of the newsletter.

The HaWG welcomes our newest member Chany Huddleston-Adrianza.

Chany Huddleston Adrianza is a hydrologic technician with the California Water Science Center's Hydrodynamics group in West Sacramento, CA. Chany started her career with the USGS in Fort Lauderdale, FL (now Davie office) shortly after graduating from Florida State University with a BS in biology and minor in chemistry. Chany's expertise lies in index velocity field data collection and discharge computations in tidal environments. She developed her foundation in hydroacoustics, and index velocity specifically, working on low flow tidal streams in the Florida Everglades in support of multiple projects in the Fort Lauderdale/Davie office. In 2013, Chany moved to Sacramento in pursuit of new opportunities and has continued to build on her initial foundation working on much larger streams in the complex Sacramento-San Joaquin River Delta. She has 10 years of experience in hydroacoustics working in coastal and tidal environments. Chany has also worked on projects collecting sheet flow for Florida Everglades restoration efforts, flow computations in backwater conditions, environments affected by saline/temperature stratification and in environments affected by pumping and/or barrier studies, such as those commonly seen in the Sacramento-San Joaquin Delta. Chany is always looking to learn new tools and techniques to improve data collection, transparency, and efficiency. Apart from providing training, guidance and support for her group, she is also very excited to learn from the experiences of other USGS scientists and technicians trying out new innovative tools to help facilitate hydroacoustic work nationwide. As a new member of the HaWG, she hopes to bring some new ideas in exchange for a wider knowledge of the use of hydroacoustics.

Chany was born in Venezuela, but moved to Miami, FL at a very young age. She has lived near the ocean most of her life so working in the marine science field and near (sometimes in) the water has been a great bonus. When work isn't happening, she likes to enjoy all the wonderful things California has to offer. From hiking, swimming, trail running or just running, her favorite place to be is outside.

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Recent Memos & Notes

Number	Short Title	Description/Comments
WMA Technical Note 24	SonTek 3,000 kHz SL 3G: Potential Relay Malfunction	This Technical Note provides information on the potential for 3,000 kHz SL 3G ADVMs to have relay issues previously identified in 1,500 kHz SL 3G ADVMs.

Previous memos can be accessed at the following location.
https://hydroacoustics.usgs.gov/memos/

Previous notes can be accessed at the following location.
https://sites.google.com/a/usgs.gov/wma-wiki/news/technote/

Software and Firmware and Equipment Issues

***Items in Red have been updated since previous newsletter**

TRDI Software	Recommended
WinRiver II Moving boat data collection software. USGS users either must use SCCM to automatically update their machines, or download from the TRDI website.	2.20 Available for testing 2.18 Required Minimum as of 2/27/2017
SxSPro (Section by Section Pro)	1.18 Allowed 1.16 Required Minimum as of 09/20/2017 -Requires a firmware upgrade and key, and then the software can be found similar to WRII. -Addresses previously identified issue with corrupt data files documented in memo 2017.13

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ChannelMaster Utilities ChannelMaster maintenance and setup software for index velocity gaging stations. Released as a replacement/complimentary software for WinH-ADCP.	1.01.00.02 Available for testing -Requires upgrade to firmware 28.39. Firmware is packaged with the utilities download.
TRDI Firmware	**Recommended**
StreamPro	31.16 Required minimum as of 08/06/2018
RiverRay	44.21 Required minimum as of 08/06/2018
RiverPro/RioPro	56.06 required minimum as of 08/06/2018
Rio Grande	10.17 Required minimum as of 02/27/2017
ChannelMaster Utilities	28.39 Available for testing Provides support for ChannelMaster Utilities software.
SonTek Software	**Recommended**
River Surveyor Live	4.10 Allowed
River Surveyor Stationary Live	4.10 Allowed
FlowTracker Software	2.30
FlowTracker 2	1.20 required minimum as of 02/27/2017 1.6 allowed
SL Software	3.0 Recommended, released by SonTek 06/2018
IQ Software	2.1 Testing, released by SonTek 10/2016
SonTek Firmware	**Recommended**
M9/S5	4.10 Required minimum. -Released to address Date/Time bug.
FlowTracker	3.90
FlowTracker2	1.60
SL-3G	3.10 allowed

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	-Released to add support for new accelerometer being used in new 3G system.
IQ/IQ Plus	2.20 allowed -Released to add support for new accelerometer being used in new 3G system.
Software, Firmware, and Equipment Issues	
WinRiver II The graphics windows will cause WR2 to crash on some combination of computer and operating system / drivers. It will work if only text windows in WR2 are open.	2.20* *A version of WRII to address this issue is in beta testing as of 8/1/2019.
WinRiver II A recent Windows 10 update, build 1809, has introduced an error with using F5 to stop and start transects. If F5 is used, the edge distance pop-up will fail to appear resulting in no edge estimate. This can be corrected during post processing or prevented by using “Acquire” and “Start/stop transect”	2.x* *A version of WRII to address this issue is in beta testing as of 8/1/2019.
M9 Firmware Firmware releases up to and including the listed version are susceptible to a bug resulting in the calendar resetting to January of 2005.	4.02
SL Firmware Firmware releases up to and including the listed version are susceptible to a bug resulting in the calendar resetting to January of 2005.	3.00
IQ Firmware Firmware releases up to and including the listed version are susceptible to a bug resulting in the calendar resetting to January of 2005.	2.15
USGS	**Recommended**

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QRev **Requires MATLAB 9.0 library- 32-bit version, 64-bit version.** Available through WFast or through the Hydroacoustics web page.	3.43 required minimum -Released 01/17/2018, includes bug fixes.
VMT VMT is software for processing and visualizing ADCP transect data collected in rivers or other bodies of water. Supports TRDI and SonTek ADCPs.	4.09
IV_Sync Available through the Hydroacoustics web page.	2.11 recommended -Resolved issue with less than 10 multi-cell values being imported from ChannelMaster files
IV_Rating Available through the Hydroacoustics web page.	6.2 recommended -released 03/15/2018, includes bug fixes

Bulletin Board

Three new USGS Field Guides are available	ChannelMaster Utilities SonTek-SL v3.x RDI SxSPro Each link can also be found at www.hydroacoustics.usgs.gov by navigating to the appropriate sections software page and looking just below the software packages hyperlink. **ChannelMaster Utilities Software** – Software for Teledyne/RDI ChannelMaster. - USGS Field Guide to ChannelMaster Utilities Software
QRev Python	Development on QRev-Py is continuing to move forward and is expected to be ready for demonstration in August of 2019.
RIVRS **(Rapid Index Velocity Rating and Syncing)**	The next generation of index velocity processing tools is approaching completion of development phase 1. This phase will serve as the replacement for the current IV_Sync spreadsheet tool used for field synchronization. Be ready for a first look at this years NWDTC!
Index Velocity Software Testing	CMU: An updated version of ChannelMaster Utilities is currently being tested for release in WFAST. This version will incorporate several new features and

	improved SDI-12 functionality. IQ: Evaluation of a significantly revised beta version of the IQ software is currently underway. This version will incorporate many of the changes found in the release of SL version 3.0.
Workhorse Rio Grande ADCPs	As of December 31, 2018 TRDI will no longer offer the Workhorse Rio Grande units for purchase. Service and repair of existing units will continue through January 2024.
Hemisphere A101	The A-101 is no longer being manufactured. It's replacement, the A-222, is now available on 1stop.usgs.gov.
IV inspection tool added to SVMAQ	With the release of SVMAQ version 2.2.114.0 a tool for aiding in inspection of ADVM equipped index velocity gages is available. A startup guide is available HERE. Edit rights are open to anyone with the link so please feel free to improve on the form if it is needed. The HaWG has continued to work with Burl Goree to implement several changes to the SVMAQ IV Inspection tool. The intent of these changes are to streamline the field experience and address bugs identified in the first release. The startup guide has been updated to reflect the upcoming inspection tool. Expect to see this update as part of a larger SVMAQ release that is anticipated by late August 2019. This tool will continue to be revised in the future, If you have suggestions for improvements please submit them HERE.
WFast.	The creation of WFast, allows offices to join WFast groups, enabling them to automatically receive software updates to their client systems as they are released using Microsoft SCCM (the same process currently used to distribute AQUARIUS). For more information refer to OSW Note. WFast Contacts Hydroacoustics: David Mueller System Administration: Nicole Bogeajis

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	For additional details on WFast see HERE.
RioPro Near-transducer Flow Disturbance Test data are being collected and analyzed for flow disturbance in the 10-25cm range.	If you are interested in helping to collect test data, please see the test guidance here or contact David Mueller.
RiverRay Compass Calibration Failure to converge errors or larger than desired compass errors may be experienced during calibration in some situations.	Testing is continuing on this issue if you are encountering similar issues please contact the HaWG with questions or comments.
DCP Script Repository A Google drive location has been established to help share scripts used for advanced DCP data collection	A Google Form is now available to upload scripts developed by you or your office. A list of available scripts and links to download them can be found on the Hydroacoustics Page. Please feel free to submit any scripts, HA related or not. We ask that you help us build this into something that can serve all technicians. For questions please contact the HaWG

Training – Upcoming Classes and Online Material

On-site Training			
2019 Training Classes schedule is available.	**Dates**	**Location**	**Closing Date**
Streamflow Record Computation using ADVM's and Index-velocity Methods	08/19/19	Salt Lake City, UT	06/14/19
Streamflow Measurements Using ADCP's	9/9/19	Augusta, ME	7/3/19
Streamflow Measurements Using ADCP's	10/21/19	Sacramento, CA	
2019 USGS NWDTC preliminary agenda	08/26/2019		

Webinars and Podcasts	
Introduction to ChannelMaster Utilities	A webinar was held on August 1, 2019 at 1400 eastern time. It covered the basic steps involved in setting up and servicing a ChannelMaster ADVM using TRDI's newly released software.
Using SVMAQ for Index Velocity Inspections	The HaWG is currently working with

	developers to help streamline the IV inspection for field use. A demonstration video will be created once the final version is released. If you have suggestions for improvements please submit them HERE
SL v3.x: An Introduction to Communicating with SonTek-SL 3G ADVMs	The HaWG recently gave a first look presentation at how to use the latest release of the SL software for servicing the SonTek 3G family of ADVMs
Online Training	
Highlighted online training- **Using ADCPs for Open Water Mid-Section ADCP Measurements**	https://hydroacoustics.usgs.gov/training/podcasts/ADCPMid.shtml
The complete list of archived online training is available.	https://hydroacoustics.usgs.gov/training/podcasts/podcasts.list.shtml

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